

5.0 ACCIDENT ANALYSIS

Construction. No fatalities are likely to result from the proposed construction and demolition activities. The Proposed Action of constructing and operating eastern and western bypass roads and access roads around TA-3 and of constructing and operating various vehicle access-control stations would consist primarily of activities that are performed on a routine basis in the road construction industry. These activities can be mostly considered common practice in a standard industry. An exception would be unanticipated exposure to low levels of radiation or chemicals resulting from accidental disturbance of a previously unidentified SWMU. This activity would be considered a specialized accident type that is somewhat unique to DOE nuclear facilities, and environmental restoration would occur before construction of the bypass roads and related improvements.

The most serious potential accident considered for the Proposed Action would be a fatality during the following construction activities:

- site environmental restoration (cleanup SWMUs as required);
- demolition, relocation, and salvaging of affected structure;
- relocation, demolition, and tie-ins for existing utilities (east side, west side);
- clearing and grubbing roadways (east side, west side);
- preparation of roadbed, drainage, retaining walls, approaches, and dirt work (east and west sides);
- construction of bridges, roads, curbs, gutters, sidewalks, new utilities, etc (east and west sides);
- construction of access-control stations and new utilities (east and west sides);
- construction of intersections, installation of traffic signals, and other associated articles at interface locations with existing roads (east and west sides);
- testing and turnover of access-control stations for operations; and
- closing existing roads and re-routing traffic through new roads.

The activities are considered a form of construction, and so potential fatalities can be considered by comparing national statistics on construction with project worker information for the Proposed Action. The estimated number of workers was compared to recent risk rates of occupational fatalities for construction. Up to 100 full-time workers could be employed for as long as 24 months. The average fatality rate in the U.S. for industries that include causes of falls, exposure to harmful substances, fires and explosions, and being struck by objects, equipment, or projectiles is 1.9 per 100,000 workers per year (Saltzman 2001). Based on this statistic and the estimated worker information, no deaths (0.0029) from these causes are expected from implementing the Proposed Action.

Transportation. Two aspects of transportation safety were considered: potential accidents associated with construction lasting up to a two-year period and potential safety associated with the post-construction period upon use of the new road system. Approximately ten pickup trucks, ten large dump trucks, and other large earth-moving equipment would be used on the project. Transportation activities during construction of the new road are expected to include the transport of road construction materials to the site and waste and recyclable materials away from

the site. Of the different types of transportation occupations nationwide, drivers of all types of trucks experience the highest fatality rate (26 deaths per 100,000 full-time workers per year) (Saltzman 2001). Presumably, most of the fatalities are associated with “semi” style, tractor and trailer rigs; therefore, the statistics are not directly comparable to transportation associated with the project. However, the transportation activities for the Proposed Action are expected to constitute a minor fraction of the amount of travel on which transportation fatality rates for industry are based. Therefore, no fatalities (0.004) are expected from transportation directly relating to the Proposed Action.

Use of the new bypass roads, after construction, would be expected to be safer for passenger vehicles than the current roads because of the more modern road and intersection designs and lower traffic volumes. Traffic would be restricted to approved vehicles that would largely be driven by LANL workers who are generally more familiar with the area, as opposed to the No Action Alternative (the status quo) where members of the general public (including area tourists) are allowed unrestricted access to TA-3.

Exposure to Environmental Levels of Radiation. Road construction activities have the potential to result in exposure to low levels of radiation or hazardous chemicals when an unknown PRS is accidentally breached. The exposure would be limited to the involved workers that may not be wearing appropriate PPE for the site’s contamination constituents. The probability of accidental breach of an unknown PRS is low. No fatalities would be expected from such an event.

Wildfire. Hot catalytic converters associated with internal combustion engines have the potential to cause ignition of a wildfire when they come into contact with tall vegetation. Since the proposed alignment of the bypass roads would cross small forested areas where heavy equipment would be used to clear the vegetation, the potential for this type of accident exists. Extreme wildfire prevention measures are enforced when necessary at LANL. These measures are based on current site conditions. Normal operational site wildfire hazard reduction measures are directed by the LANL Wildfire Hazard Reduction Program. The likelihood of this accident occurring would be, among other events, related to the failure to adhere to the restriction on driving or parking off of established roadways. If appropriate site requirements and restrictions are followed, then there is no likelihood of any fatalities from wildfire as a result of implementing the Proposed Action.